APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,267	10/22/2003	Eric A. Shank	10030564-1	4937

7590   05/18/2005

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EXAMINER
KRAMSKAYA, MARINA

ART UNIT	PAPER NUMBER
2858	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/691,267	SHANK ET AL.
	Examiner	Art Unit
	Marina Kramskaya	2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 February 2005</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-20</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>22 October 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

2.   Claims 1 & 3-8 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Clark et al., US 6,064,694, in view of Johnson et al., US 6,820,225.

As per Claim 1, Clark discloses a method for testing a frequency converter

(FIG. 1: **14, 16**) comprising:

(a) preprogrammed labels for a plurality of mixing products (M_A-M_C) in the

automated controller **12**; and,

(b) in response to an automatic controller **12** selecting a first mixing

product from the plurality of mixing products, performing the following:

(b_1) calculating appropriate frequencies for the first mixing product

(FIG. 2, step **56**), and

(b_2) determining a measurement configuration (FIG. 5A-E, 6) for the

first mixing product (column 11, lines 16-20).

Clark does not disclose :

(a) displaying labels for a plurality of mixing products; and,

(b) a response to a user selected a first mixing product from the plurality of mixing products.

Johnson discloses:

(a) displaying **10** labels for a plurality of mixing products; and,

(b) a response to a user selected (column 2, lines 66-67) a first mixing product from the plurality of mixing products.

Therefore, it would have been obvious to a person of ordinary skill in the art to include a display for user selection as taught by Johnson, rather that the automated controller as taught by Clark, in order to have more user interaction and control to make only the user selected calculations.

As per Claim 3, Clark further discloses the method as in claim 1 wherein (b_1) includes using parameters for the frequency converter (column 12, lines 63-65).

As per Claim 4, Clark discloses the method as applied to Claim 1 above. Clark further discloses the method as in claim 1 wherein (b_1) includes using parameters for the frequency converter (column 12, lines 63-65).

Clark does not disclose a measurement parameters obtained from the user.

Johnson discloses a measurement parameters obtained from the user (column 2, lines 66-67).

Therefore, it would have been obvious to a person of ordinary skill in the art to include measurement parameters obtained from the user, as taught by Johnson, in the testing method of Clark, in order to have more user interaction and control to make only the user selected calculations.

As per Claim 5, Clark further discloses additionally including the step of:

(b_3) sending commands to hardware to make measurements (by **10, 12** to **24**).

As per Claim 6, Clark further discloses a method as in claim 5 wherein the hardware in (b3) includes tester hardware (**10, 12**) and an external local oscillator **24**.

As per Claim 7, Clark further discloses a method as in claim 1 wherein in the plurality of mixing products include at least one of the following measurements:

1. Match Input (column 1, lines 47-48);

2. Match Output (column 1, lines 47-48);

3. Match local oscillator (LO);

4. Isolation In→Out;

5. Isolation LO→Out;

6. Isolation Out→In;

7. Isolation LO→In;

8. Isolation Out→LO;

9. Isolation In→LO;

10. Conversion Gain vs. Input Power;

11. Input Match verses Input Power;

12. Spur Table;

13. Image Rejection;

14. Swept Spur;

15. Conversion Gain;

16. Gain compression.

As per Claim 8, Clark discloses a method of testing as applied to Claim 1 above, including 1(b_2).

Clark does not disclose including the use of measurement parameters obtained from the user.

Johnson discloses including the use of measurement parameters obtained from the user (column 2, lines 66-67).

Therefore, it would have been obvious to a person of ordinary skill in the art to include measurement parameters obtained from the user, as taught by Johnson, in the testing method of Clark, in order to have more user interaction and control to make only the user selected calculations.

3.   Claims 2 & 9-20 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Clark in view of Johnson, further in view of Blackham, US

6,396,285.

        As per Claim 2, Clark in view of Johnson disclose a method of testing as

applied to Claim 1 above,

        Clark as modified does not disclose the step wherein in 1(a) the labels are

obtained from a table defining the plurality of mixing products.

        Blackham discloses obtaining the labels from a table defining the plurality

of mixing products (TABLE 4).

        Therefore, it would have been obvious to a person of ordinary skill in the

art to include a table defining the plurality of mixing products as taught by

Blackham, in the testing method of Clark, in order to have an organized list to

increase usability.

        As per Claims 9 & 15, Clark discloses an interface for a tester comprising:

        a processor (FIG. 1: **10**, **12**) that, in response to an automatic controller **12**

selecting a first mixing product from the plurality of mixing products (M_A-M_C),

calculates appropriate frequencies for the first mixing product (FIG. 2, step **56**),

and determines a measurement configuration (FIG. 5A-E, 6) for the first mixing

product (column 11, lines 16-20).

        Clark does not disclose:

- a table that defines a plurality of mixing products, the table including labels

    for the plurality of mixing products;

- a first display interface that displays at least a subset of the labels;

- a user selecting from a plurality of mixing products.

    Johnson discloses:

- a first display interface **10** that displays at least a subset of the labels;

- a user selecting from a plurality of mixing products (column 2, lines 66-67).

    Blackham discloses:

a table that defines a plurality of mixing products, the table including labels

for the plurality of mixing products (TABLE 4).

Therefore, it would have been obvious to a person of ordinary skill in the

art to have the labels in a table format, as taught by Blackham, and a user

selection option, as taught by Johnson, rather then the automated controller

selection, as taught by Clark, in order to have more user interaction and control

to make only the user selected calculations.

As per Claims 10 & 16, Clark further discloses an interface as in claims 9

& 15 wherein in the plurality of mixing products include at least one of the

following measurements:

1. Match Input (column 1, lines 47-48);

2. Match Output (column 1, lines 47-48);

3. Match local oscillator (LO);

4. Isolation In→Out;

5. Isolation LO→Out;

6. Isolation Out→In;

7. Isolation LO→In;

8. Isolation Out→LO;

9. Isolation In→LO;

10. Conversion Gain vs. Input Power;

11. Input Match verses Input Power;

12. Spur Table;

13. Image Rejection;

14. Swept Spur;

15. Conversion Gain;

16. Gain compression.

As per Claim 11 & 17, Clark as modified discloses an interface as applied to Claims 9 & 15 above. Clark further discusses determining a measurement configuration (FIG. 5A-E, 6) for the first mixing product, wherein the processor uses measurement parameters preprogrammed in the controller.

Clark does not disclose user input parameters.

Johnson discloses user input parameters (column 2, lines 66-67)..

Therefore, it would have been obvious to a person of ordinary skill in the art to include user input parameters as taught by Johnson, in the automatically controlled interface of Clark, in order to allow the user control over the calculations and measurements.

As per Claims 12 & 18, Clark further discloses, when calculating appropriate frequencies (column 12, lines 63-65) for the first mixing product M_A, the processor uses parameters for the frequency converter (column 11, line 17).

As per Claims 13 & 19, Clark as modified discloses an interface as applied to Claims 9 & 15 above. Clark further discloses, when calculating appropriate frequencies (column 12, lines 63-65) for the first mixing product M_A, the processor uses parameters for the frequency converter (column 11, line 17).

Clark does not disclose using measurement parameters obtained from the user.

Johnson discloses using measurement parameters obtained from the user.

Therefore, it would have been obvious to a person of ordinary skill in the art to include user obtained measurement parameters, as taught by Johnson, in the interface of Clark, in order to allow the user more control over the interface operation.

As per Claims 14 & 20, Clark further discloses an interface wherein the processor (**10, 12**) sends commands to tester hardware (LO **24**) to make measurements.

Response to Arguments

4.   Applicant's arguments filed 02/22/2005 have been fully considered but they are not persuasive.

In response to applicant's argument that Clark (6,064,694) does not test a frequency converter, the examiner draws attention to the abstract and summary portion of patent number 6,064,694, wherein Clark discloses a measurement method of a "frequency translating device" (ABS, lines 1-3) and further that the FTD (frequency translating device) functions as a frequency converter (column 3, lines 3-5), wherein the FTD is the device under test DUT.

In response to applicant's argument that the teachings of Johnson do not support independent claims 1, 9, & 15, the examiner draws attention to Johnson's teaching of a tester with a user interface display. The primary reference of Clark teaches an automatic controller for the selection process, and uses the display for the results only. Therefore, it would be obvious to a person of ordinary skill in the art to incorporate the teachings of Johnson with respect to a user interface and display **12** for selecting the test data by the user, rather than the by automatic controller, as taught by Clark.

In response to applicant's argument that Clark does not suggest calculating appropriate frequencies for a mixing product, the examiner draws attention to Clark at Figure 4, step **56**, and the equations in column 11, lines 39-41 where Clark teaches calculating the response for a proper frequency range for

a selected measurement. The equations, as taught by Clark, satisfy the limitations as called for by applicant's claims 1, 9, & 15.

In response to applicant's argument that Blackham (6,396,285) does not teach a table that defines a plurality of mixing products, the examiner draws attention to Table 4 in patent number 6,396,285, as applied to the claim 9 and claim 15 rejections above. The said table, in effect, teaches a means for defining the parameters that need to be tested, such as the mixing products. Therefore, it would be obvious to a person of ordinary skill in the art to use a table for defining the parameters that need to be tested, as taught by Blackham, to define the mixing products as taught by Clark.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Kramskaya whose telephone number is (571)272-2146. The examiner can normally be reached on M-F 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571)272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANJAN DEB
PRIMARY EXAMINER

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Art Unit 2858

MK